

## Direct drive pumps

Easy-to-install canned motor pumps



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Our RD series design features small canned motor centrifugal pumps powered by brushless DC motors. They are designed to be cool, quiet, compact and light-weight. A variety of features, including a seal-less design to prevent leakage, enables the pumps to meet a full spectrum of user needs, with emphasis on ease of installation, operation and maintenance.

Note: RD series is only exclusive for machine-installing application.



## Specification

### RD-05, RD-05H, RD-20, RD-30

Model	Connection sizes		Max. capacity	Max. head	Motor					Weight
	Suc.	Dis.			Output	Power consumption	Revolution speed	Power voltage	Rated	
	mm	mm	L/min	m	W	W	min <sup>-1</sup>	VDC		kg
RD-05	14	8	4	3	4	10	3500	24	continuous	0.4
RD-05H			6	9	18	39	6000		Intermittent	0.45
RD-20	18	18	15	8	28	60	3200		continuous	1.3
RD-30			20	10	45	77	3500		continuous	

- Operating temperature: 0 °C to 40 °C • Ambient temperature: 0 °C to 40 °C
- Note 1: The properties specified above are for a power voltage of 24 VDC. Pump performance varies according to the power voltage applied.
- 2: Operating voltage: 14 V to 24 V
- 3: Pump performance varied when s.g. exceeds 1.0 or viscosity exceeds 1 mPa·s, so please consult IWAKI;
- 4: The standard cable is 500 mm in length.
- 5: For uses in which the standard specifications are not applicable, please contact us.

Caution: "On-Off" operation is prohibited for more than 1 time/minute.

### RD-12 (Power source 24 VDC Input signal 5.0 VDC)

Model	Connection (IN x OUT)			Max. capacity	Max. head	Power consumption	Rated voltage	Operating condition	Ambient temperature	Liquid temperature range	Mass
	Quick fastener	Thread	Hose (mm)								
12W	P16 x P14	NPT3/8 x NPT3/8	18 x 18	10	6	24	24	continuous	0 - 50	0 - 75	0.4
8W (Note1)				8.5	4	20				0 - 80	
5W (Note1)				7	2.5	12				0 - 85	

### RD-12Z (Power source 24 VDC Input signal 5.0 VDC)

Model	Connection (IN x OUT)			Max. capacity	Max. head	Power consumption	Rated voltage	Operating condition	Ambient temperature	Liquid temperature range	Mass
	Quick fastener	Thread	Hose (mm)								
14W	P16 x P10	NPT 3/8 x NPT 1/4	18 x 10	3	9	28.8	24	continuous	0 - 50	0 - 60	0.4
9W (Note1)				2.6	6.5	21.6				0 - 70	
6W (Note1)				2.1	4.5	14.4				0 - 75	
4W (Note1)				1.7	3	9.6				0 - 80	

- Note1: Special model based on order. Please contact us for details.
- Note2: Optional cable length is 500 mm.

### Compact and lightweight with a seal-less structure

The canned motor type products in our RD series are light and compact. Unlike conventional magnetic drive pumps, they do not require a large amount of space for installation. Their seal-less structure eliminates leaks and problems involving seal replacement.

### Long life

A DC brushless motor is employed as the pump drive. This type of motor reduces concerns over brush abrasion, ensuring a service life as long as that of an AC motor.

### Facilitating standard compliance

The RD series pumps power source voltage is classified as safety voltage (50 V or less), which allow the user to easily comply with international standards such as UL, CSA, CE and GS.

### Standardized models

Unlike AC power sources, which require different voltages and frequencies depending on the country in which they are used, DC power sources use the same voltage in all areas. Because the RD series has a DC motor, the user is not troubled by motor voltage.

### Flow adjustment feature

Easy flow adjustment by changing power supply voltage. For the RD-12/12Z, the external variable signal of 1-5VDC makes flow adjustment.

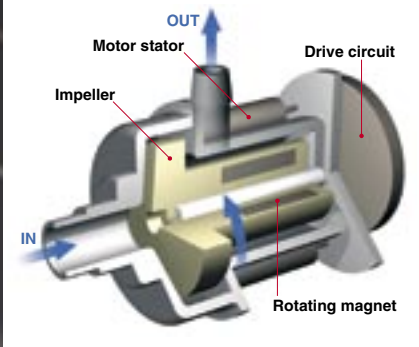
### Built-in drive circuit

All you have to do is connecting the power supply to run the pump.

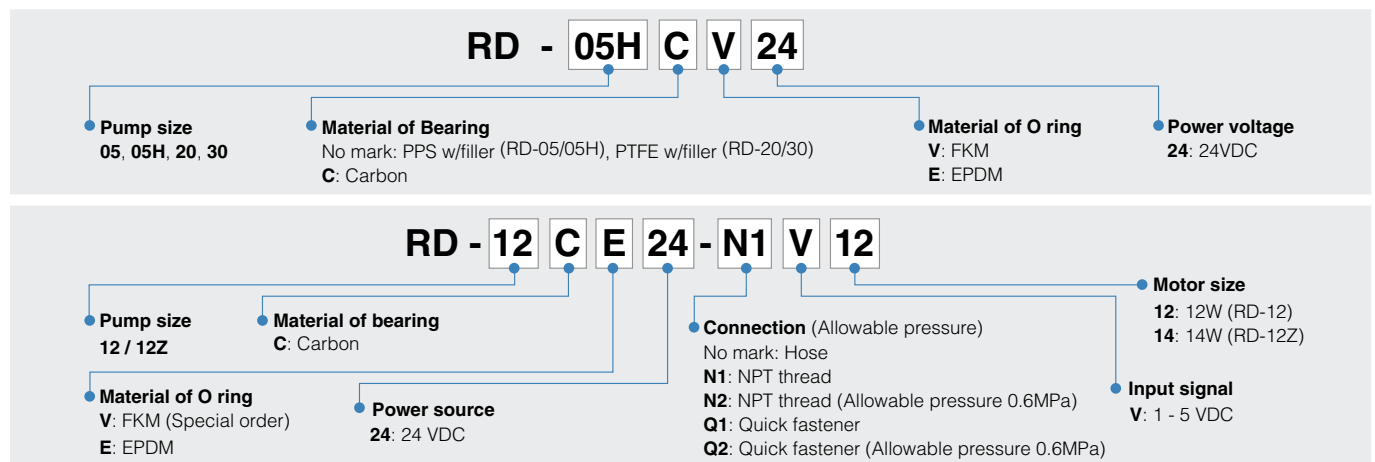
(Note) The external variable signal is required as well as the power supply for the RD-12/12Z.

### Operating principle

These canned centrifugal pumps directly drive the rotor magnet incorporating an impeller. The pump chamber is completely sealed from the exterior by a casing. The impeller, driven by a rotating magnetic field, requires no shaft seal. In addition, these products have a simpler and more compact structure than pumps which have external drive magnet.



## Pump identification



## Construction and material

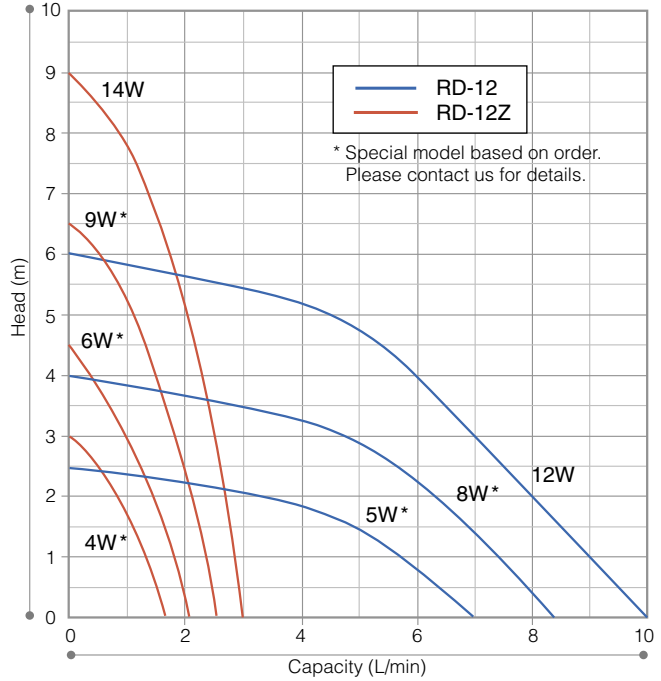
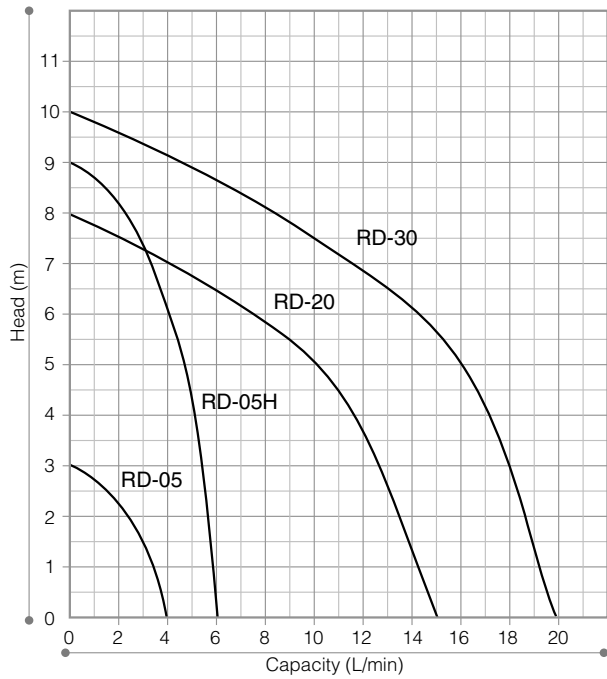
RD-05,05H

RD-20,30

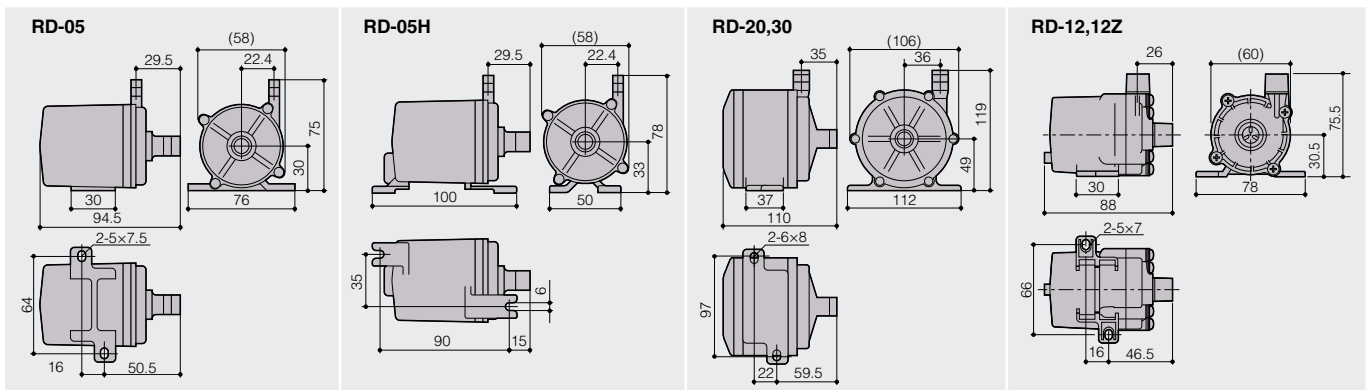
RD-12,12Z

<b>1 Casing</b>	PPE (RD-05,05H,20,30), GFRPPS (RD-12,12Z)
<b>2 Rear casing</b>	GFRPPS (RD-12,12Z)
<b>3 Impeller</b>	GFRPP (RD-05,05H,20,30) GFRPPS (RD-12,12Z)
<b>4 Spindle</b>	Alumina ceramic
<b>5 Bearing</b>	PPS w/filler (RD-05,05H), PTFE w/filler, Carbon (RD-20,30), Carbon (RD-12, 12Z)
<b>6 Thrust ring</b>	Alumina ceramic
<b>7 O ring</b>	FKM or EPDM

## Performance curves



## Dimensions (mm)



\* RD-12, 12Z illustration shows thread type. Please contact us for details.

## Typical applications

- Medical care: Biochemical analysis, cooling devices, poultice/low temperature therapeutic machines, cooling for laser treatment
- Physical/chemical analysis: Thermostatic devices, demineralizers, a variety of analyzers
- Automatic vending machine: Dispensers
- Photography: Automatic film developers, x-ray film developers
- Semiconductors: Cooling devices
- Surface treatment: Small-scale plating machines
- Solar power systems: Electric water heaters, solar battery collectors
- Electric cars: Radiators, heaters